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JUN 18 2004
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7-6-04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before Applicant:	Jeffrey L. Huckins	Art Unit:	2157
Serial No.:	09/652,690	Examiner:	Abdullahi Elmi Salad
Filed:	August 31, 2000		
For:	Controlling Remote Storage Devices	Atty Docket:	ITL.0454US P9662

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

Applicant respectfully appeals from the final rejection mailed February 12, 2004.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee Intel Corporation.

II. RELATED APPEALS AND INTERFERENCES

None.

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Date of Deposit: June 15, 2004
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as **first class mail** with sufficient postage on the date indicated above and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Cynthia L. Hayden

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III. STATUS OF THE CLAIMS

Claims 1-30 are rejected. Each rejection is appealed.

IV. STATUS OF AMENDMENTS

All amendments have been entered.

V. SUMMARY OF THE INVENTION

Referring to Figure 1, a network may include at least one server or head-end 10 and a plurality of clients 12 (only one of which is shown). The server 10 may be coupled to a plurality of clients (including the client 12) through a distribution system that may be based on a wired system or a wireless or broadcast system. Examples of such networks include television distribution networks such as digital video broadcasting systems.

In one embodiment of the present invention, the server 10 may communicate with the clients 12 over a transport 14. The transport 14 may be in accordance with an analog or digital broadcasting system.

In accordance with embodiments of the present invention, the client 12 recognizes messages directed individually to that client 12 from the server 10 or in some embodiments, from other clients 12. Bandwidth may be conserved by addressing messages to a group of clients without the need to insert, within header, the individual identifiers of each of a large number of addressed clients. See specification at page 2, line 11 through page 3, line 9.

In addition, the client 12 may include one or more addressable agents 44, 46 and 48 that may be independently addressed by remote units such as the server 10. Moreover, by providing addressable agents 44, 46 and 48 within a given client 12, messages that are specialized or which

need specialized handling may be addressed to particular agents resident on the client 12 for appropriate handling.

The server 10 may include a software download and update server 16. The server 16 is responsible for transmitting software or software updates to the client 12. The server 16 transmits messages which include a distinct service identifier (e.g., service_id=0x01). The server 10 may also include an instant messaging or short message service (SMS) server 18 that also transmits messages having a distinct service identifier (e.g., service_id=0x02).

In addition, a client disk management server 20 may be provided as well. The client disk management server 20 may transmit messages that include one or more distinct service identifiers (e.g., service_id=x). In some cases, a variety of messages may be issued by the client disk management server 20 in order to initiate desired functions on a client's storage device or disk drive. For example, separate service identifiers may be utilized for the commands to create partitions, delete partitions, or modify partitions, as examples. See specification at page 3, line 10 through page 4, line 8.

In accordance with one embodiment of the present invention, the server 10 may implement a unidirectional messaging system. In a unidirectional messaging system, the server 10 may transmit messages to a plurality of clients that are unable to respond in any way. One example of such a network is a direct-to-home (DTH) broadcast network. The network may use a connection oriented communication protocol or a real time connectionless communication protocol as two examples. There are many applications of unidirectional messaging from server to client such as instant messaging, command and control and notification and signaling, as examples. In other cases, the network may be a bidirectional network, for example with an Internet Protocol (IP) multicast backbone.

In one embodiment of the invention, the server 10 may include a unidirectional messaging server (UMS) 22 that is coupled to the servers 16, 18 and 20 to generate messages in an appropriate format. The messages transmitted by the UMS server 22 may include messages originally generated by one of the servers 16, 18 or 20. The UMS server 22 may then be coupled to an Internet Protocol multicast module 24 that places the messages in an appropriate multicast protocol format. Finally, a DVB Multiprotocol Encapsulation (MPE) 26 is coupled to the Internet protocol multicast module 24. The output of the DVB MPE 26 and a DVB-Service Information (SI) generator 28 are coupled to the transport 14. Service Information is digital data describing the delivery system, content and scheduling/timing of broadcast data streams.

In the client 12, the stream from the DVB-SI generator 28 is coupled to a DVB-SI receiver 40 and service acquisition module 38. The service acquisition module 38 extracts a program identifier (PID) and provides it to a DVB demultiplexer 32. A tuner 30 may tune the client 12 to the appropriate channel corresponding to the extracted program identifier. See specification at page 4, line 9 through page 5, line 22.

The message from the DVB MPE 26 is provided to a DVB MPE receiver 42. The receiver 42 communicates with an IP multicast module 40 and a unidirectional messaging server 38. The server 38 breaks down the message to determine whether a service identifier was included in the data stream. If so, the message is forwarded to an appropriate agent designated to receive messages with particular service identifiers.

A disk management agent 44 may be coupled to a disk drive controller 47 in turn coupled to a storage device 45 that may, for example, be a hard disk drive. The disk management agent 44 may be addressed as a message recipient by the client disk management server 20. The disk management agent 44 may cause processes to be undertaken through the controller 47 that in

turn control the use of the storage device 45. This control may include determining what information is stored on the storage device 45 and how that information is stored on the storage device 45.

In one embodiment of the present invention, the software download and update server 16 may provide a specific message identifier that causes its message to be received by a software download agent 48 tuned to a particular service identifier. Similarly, messages from the instant messaging server 18 may include a service identifier that cause those messages to be forwarded to an instant messaging agent 46 in the client 12. Likewise, messages from other servers 20 may have appropriate identifiers that cause them to be shunted to particular agents 44 on the client 12.

The server 10 may include a storage 25 that stores software 70 for controlling the operation of the server 22. Likewise, the server 38 on the client 12 may be coupled to a storage 45 that stores software 50 that controls the operation of the server 38. The servers 22 and 38 may also be processor-based systems. See specification at page 5, line 23 through page 7, line 6.

Turning next to Figure 2, the software 50 on the client 12 initially receives the unidirectional messaging server address and port from the server 10. The client 12 may also be assigned a client identifier as indicated in block 52. Having received its address, port and client identifier, the client 12 receiver joins a multicast group and listens for messages addressed specifically to it or to any groups that the client 12 belongs to, as indicated in block 54.

A disk management agent 44 registers its service identifier with the UMS server 38 as indicated in block 56. When the UMS server 38 receives a packet with a UMS message, as indicated in block 58, a check determines whether the particular client 12 is the intended recipient as indicated in diamond 60. If not, the message is discarded as indicated in block 62.

However, if the particular client 12 is the intended recipient, the server 38 checks the message's service identifier and passes the message to the correct agent 44, 46 or 48, as indicated in block 64. The message is then delivered to the appropriate agent 44, 46 or 48, as indicated in block 66. In the agent, the information is parsed and passed to an appropriate process for handling as indicated in block 68. See specification at page 7, line 7 through page 8, line 12.

For example, when addressed, the disk management agent 44 sends appropriate commands to the controller 47 for relay to the storage device 45. Dependent on the service identifier accompanying the message, the agent 44 may provide appropriately translated commands to the controller 47 such as the commands to create a partition, delete a partition or modify a partition. Each of these commands may be given separate service identifier values such as 0x03, 0x04 and 0x05. The disk management agent 44 may translate a message with a service identifier value into an appropriate format for the controller 47 based on the message received from the client disk management server 20. For example, with a message that includes a service identifier value 0x03, the agent 44 may issue a command to the controller 47 to partition the storage 45.

On the server side, shown in Figure 3, the network software 70 begins by assigning multicast addresses and ports for unidirectional messaging service to a plurality of clients 12 as indicated in block 72. The server 10 may also assign client identifiers in a dynamic and reconfigurable fashion. The address, port and client identifiers are then transmitted to the clients as indicated in block 74.

Thereafter, the disk management server 20 may create a data structure and pass this data structure to the server 22 as indicated in block 76. The server 22 creates a unidirectional message and assigns a client value, sets a group flag, and copies private data in the private bytes

of the message as indicated in block 78. More particularly, a unique client identifier may be assigned. The client identifier may either be a particular preassigned client identifier or, as one example, may be zero when multiple clients are targeted. See specification at page 8, line 13 through page 9, line 25.

As indicated in block 80, the message is then sent to all the clients 12 on the network. Each client then determines whether the message is intended for that client. The client 12 determines whether it is the specific intended recipient by determining whether the message is addressed to the client identifier of the client 12. For example, using an AND logic operator between the message's identifier and the client's identifier, the client 12 may determine if the client 12 is within a group of clients jointly addressed by the server 10. See specification at page 10, line 1 through page 11, line 8.

In one embodiment of the present invention, distinct groups of users may receive common client identifier elements. Thus, a plurality of clients whose owners have signed up for enhanced service may include a common code portion in their client identifier. When a message including that common code portion in the client identifier is received, each of those clients accepts the message. Likewise, clients in particular geographic areas, having particular interests or otherwise identifiable clients may be given unique prefixes/suffixes or identifier code portions. The code portion may be logically ANDed with a group_mask to determine whether a particular client is a member of the targeted group.

The management message header may also include fields to address the disk management agent 44, such as a volume_name_len field that provides the volume, name, length and bytes for the pertinent volume of a storage device 45 in the form of a hard disk drive. In addition, a volume_name_byte field may give the volume name bytes that make up the name of the volume

to mount on which to create a partition. Finally, a partition_size field may give the size of the partition to create in bytes.

In this way, the client disk management server 20, under the direction from the server or head-end 10, may control how the storage 45 is set up and utilized on a targeted client 12 or a targeted group of clients 12. Each of the clients 12 may be individually addressed, the entire set of clients may be addressed or any subgroup of clients may be collectively addressed such that their storage devices 45 may be individually or collectively modified. Thus, the storage devices 45 of one or more clients may be selectively controlled from the server 10. See specification at page 11, line 9 through page 12, line 23.

VI. ISSUES

A. Is Claim 1 Anticipated by Itoh?

B. Is Claim 2 Obvious over Itoh in view of Dan?

C. Is Claim 9 Anticipated by Itoh?

D. Is Claim 10 Anticipated by Itoh?

E. Is Claim 25 Obvious over Itoh in view of Dan?

F. Is Claim 26 Obvious over Itoh in view of Dan?

VII. GROUPING OF THE CLAIMS

Claims 8, 18, 21 and 22 may be grouped with claim 1.

Claims 3-7, 12-17, 22-24, and 27-30 may be grouped with claim 2.

Claim 19 may be grouped with claim 9.

Claim 20 may be grouped with claim 10.

VIII. ARGUMENT

A. Is Claim 1 Anticipated by Itoh?

Claim 1 calls for a method including receiving on a first client a message from a server addressed to the client and controlling management of data storage by the client based on information included in the message.

The Itoh reference fails to teach controlling management of data storage by the client based on information included in the message[1]. Itoh merely teaches a request-response protocol in a server-client architecture. Control of management of data storage is not taught. That is, claim 1 includes the limitation of controlling management of data storage by the client based on the information in the message from a server. However, no control of management of data storage by client based on information included in the message from a server is taught in the Itoh reference.

Itoh merely teaches retrieval and printing of appropriate data using a client-server architecture in which a request- response protocol is followed. *See,* col. 5, ll. 10-12. Further, in column 7, line 25, a peripheral device is disclosed including a client control unit, a data memory unit and a server control unit. Using the client and server control units, the peripheral device updates the information already stored in the data storage unit or alternatively new information is stored in the data storage unit. However, the peripheral device does not control management of a data memory unit based on information included in a message from the server.

The peripheral device merely accesses the data storage unit via a task command unit for retrieving response data. Based upon the response data, the client control unit updates information already stored in the data storage unit via a task command unit. Nothing in any

message from the server is used to control how data storage is managed on the client. The data received from the server is simply stored or not based on decisions made at the peripheral device, not based on information in the message.

Therefore the rejection of claim 1 should be reversed.

B. Is Claim 2 Obvious over Itoh in view of Dan?

Claim 2, dependent on claim 1, includes defining a messaging service type and message identification to dynamically control storage for groups of clients or individual clients.

The Examiner admits that the Itoh reference does not teach this limitation. However, the Examiner cites the Dan reference to provide the teaching of a multicast messaging group in column 1, lines 50-67. Rather than defining a messaging service type and messaging identification to dynamically control storage for groups of clients or individual clients, the Dan reference merely teaches broadcasting a portion of data to the clients in a multicast group in response to determining that the service request was from the leader.

In other words, the dynamic control of storage for groups of clients or individual clients is not taught by the Dan reference let alone by defining a messaging service type and messaging identification. In the Dan reference, multiple clients are serviced by video streams delivered from a central video server. Dynamic control of storage for groups of clients or individual clients is not taught or suggested by the pace control for multicasting in a video server environment of the Dan reference.

Accordingly, claim 2 is not rendered obvious to one of an ordinary skill in the pertinent art in view of the combination of the Itoh and Dan references. The references, considered alone

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[1] In the Advisory Action the Examiner disputes this statement, arguing that the peripheral in Itoh acts as a client, but even if this is so, the management of data storage is not controlled in Itoh based on information included in a message, as claimed.

or together, fail to teach claim 2 limitations, as set forth above. Therefore, the rejection should be reversed.

C. Is Claim 9 Anticipated by Itoh?

Claim 9, dependent on claim 1 calls for receiving a message including an identifier which specifies a task to perform on a storage device.

Claim 9 was rejected as anticipated by Itoh, which is asserted to disclose "a system including receiving a message including an identifier which specifies a task to perform on a storage device," citing column 7, line 26, through column 8, line 14.

However, nothing in any of this material indicates that the message includes an identifier that specifies a task to perform on a storage device.

Therefore, the rejection of claim 9 should be reversed.

D. Is Claim 10 Anticipated by Itoh?

Claim 10 is dependent on claim 9 and includes receiving a message including an identifier indicating a change to a partition on the storage device. Claim 10 was rejected based on Itoh without even addressing the limitation relating to a partition.

Plainly, the reference fails to teach the claimed invention and the rejection should be reversed.

E. Is Claim 25 Obvious over Itoh in view of Dan?

Claim 25 is dependent on claim 24 and calls for transmitting a message including an identifier which species a task to perform on a storage device.

Claim 25 was rejected based on Itoh which allegedly teaches a system "including receiving a message including an identifier which specifies a task to perform on a storage device." The rejection does not even address the requirement for transmitting a message and the

cited material, column 7, line 26, through column 8, line 14, fails to teach the claimed invention in any case.

Therefore, the rejection should be reversed.

F. Is Claim 26 Obvious over Itoh in view of Dan?

Claim 26 is dependent on claim 24 and calls for transmitting a message to an agent on a client to cause the client to alter the way information is stored on the client.

Claim 26 was rejected as anticipated by Itoh, claiming that Itoh "discloses a system including receiving a message including an identifier which specifies a task to perform on a storage device." However, no such disclosure is provided in Itoh and, moreover, the argument fails to meet the claimed invention which calls for transmitting such a message.

Therefore, the rejection of claim 26 should be reversed.

IX. CONCLUSION

Applicant respectfully requests that each of the final rejections be reversed.

Respectfully submitted,

Date: June 15, 2004

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APPENDIX OF CLAIMS

The claims on appeal are:

1. A method comprising:

receiving on a first client a message from a server addressed to said client; and

controlling management of data storage by said client based on information included in said message.

2. The method of claim 1 further comprising:

defining a messaging service type and message identification to dynamically control storage for groups of clients or individual clients;

assigning an individual identifier to the clients comprising a set of clients including said first client;

assigning a group identifier to a subset of the clients within the set of clients; and

enabling the first client in said set to determine whether a message is sent to the first client or to the subset.

3. The method of claim 2 further including sending a single message to a subset of said clients.

4. The method of claim 2 including sending television content to a plurality of clients.

5. The method of claim 2 wherein assigning an individual identifier includes assigning a code portion that identifies a particular client as belonging to a subset of clients within the set of clients.

6. The method of claim 5 including comparing a group identifier, received by a client with a message, to the client's individual identifier to determine whether the particular client is within the addressed subset.

7. The method of claim 2 including addressing the same message to a subset of clients.

8. The method of claim 2 including sending a message to a client in a unidirectional messaging system.

9. The method of claim 1 including receiving a message including an identifier which specifies a task to perform on a storage device.

10. The method of claim 9 including receiving a message including an identifier indicating a change to a partition on said storage device.

11. An article comprising a medium storing instructions that enable a processor-based system to:

receive on a first client a message from a server addressed to said client; and

control management of data storage by said client based on information included in said message.

12. The article of claim 11 further comprising a medium storing instructions that enable a processor-based system to:

define a messaging service type and message identification to dynamically control storage for groups of clients or individual clients;

assign an individual identifier to a client comprising a set of clients;

assign a group identifier to a subset of the client within the set of clients; and

enable a first client in said set to determine whether a message is sent to the first client or to the subset.

13. The article of claim 12 further storing instructions that enable the processor-based system to send a single message to a subset of said clients.

14. The article of claim 12 further storing instructions that enable the processor-based system to send television content to a plurality of clients.

15. The article of claim 12 further storing instructions that enable the processor-based system to assign a code portion that identifies a particular client as belonging to a subset of clients within the set of clients.

16. The article of claim 15 further storing instructions that enable the processor-based system to compare a group identifier, received by a client with a message, to the client's individual identifier to determine whether the client is within the address subset.

17. The article of claim 12 further storing instructions that enable the processor-based system to address the same message to a subset of clients.

18. The article of claim 12 further storing instructions that enable the processor-based system to send a message to a client in a unidirectional messaging system.

19. The article of claim 11 further storing instructions that enable the processor-based system to decode a command within said message to modify the storage of information on a storage device.

20. The article of claim 19 further storing instructions that enable the processor-based system to modify a partition on said storage device in response to a command included within said message.

21. A system comprising:

a processor-based device; and

a storage storing instructions that enable said processor-based device to, receive a message from a server addressed to said processor-based device and control management of data storage by said client based on information included in said message.

22. The system of claim 21 wherein said storage stores instructions that enable the device to compare a group identifier in a message to determine whether the device is within a group addressed by said server.

23. The system of claim 22 including a comparator that compares a group identifier, received by the device with a message, to the device's individual identifier to determine whether the particular device is within the addressed subset.

24. A method comprising:

defining a messaging service type and message identification to dynamically control storage for groups of clients or individual clients;

transmitting a message to a client; and

controlling the storage of information on said client based on information included in said message.

25. The method of claim 24 including transmitting a message including an identifier which specifies a task to perform on a storage device.

26. The method of claim 24 including transmitting a message to an agent on said client to cause the client to alter the way information is stored on said client.

27. An article comprising a medium storing instructions that enable a processor-based system to:

define a messaging service type and message identification to dynamically control storage for groups of clients or individual clients;

transmit a message to a client; and

control the storage of information on said client based on information included in said message.

28. The article of claim 27 further storing instructions that enable a processor-based system to transmit a message including an identifier which specifies a task to perform on a storage device.

29. The article of claim 27 further storing instructions that enable a processor-based system to transmit a message to an agent on said client to cause the client to alter the way information is stored on said client.

30. A system comprising:

a processor-based device; and

a storage storing instructions that enable said processor-based device to define a messaging service type and message identification to dynamically control storage for groups of clients or individual clients, transmit a message to a client and control the storage of information on said client based on the information included in said message.